

REMARKS

The amended claims are supported by the embodiment described at page 6 of the present specification. No new matter is believed to have been added by entry of this amendment. Claims 1-15 are active.

Applicants wish to thank the Examiners for the courteous and helpful discussion held with Applicants' representative on March 25, 2003. During the discussion, it was noted that there is no evidence of record supporting the Examiner's proposal that the claimed EL device could be fabricated by separately preparing the light emitting layer and insulating layers.

Applicants previously argued that there is no motivation to combine Epstein and Nomura, and if combined, the combination would not provide a functioning EL device because the conditions for preparing the insulator layer of Nomura (i.e., heating at 200-400°C, then sintering at 1,100-1,400°C) would destroy the organic light emitting layer of Epstein. See page 6 of the Amendment and Request for Reconsideration filed October 24, 2002.

In rebuttal, the Office suggests that combination of Epstein and Nomura could provide the claimed EL device, because "the insulator layers could be prepared separate from the light emitting layer." However, Applicants respectfully submit that the Examiner's argument is improper. M.P.E.P. 2144 states that the "rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art, or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent". Neither Epstein nor Nomura either expressly or implicitly describe or suggest that an EL device can be prepared in the manner suggested by the Examiner. In fact, both Epstein and Nomura only describe sequentially depositing the various layers of the devices described therein, then, as described in Nomura, firing and annealing the "green chip" to

provide “a capacitor chip” (Nomura at col. 13, lines 3-6). Thus, there is no suggestion or implication in Epstein or Nomura that such a process is possible.

Furthermore, the Examiner has failed to indicate that the proposed method of separately preparing the light emitting and insulator layers is a method “generally available to one of ordinary skill in the art”, based on “scientific principals”, or “legal precedent”. If the proposed method is based on “generally available” knowledge, the Examiner must either present documentary evidence, an affidavit, or other explicit evidence, unless the “knowledge is of such notorious character that official notice can be taken” (M.P.E.P. 2144.03).

Likewise, if the basis of the Examiner’s proposed method is reliance on scientific theory or legal precedent, the Examiner is required to provide documentary evidence thereof (M.P.E.P. 2144.02 and 2144.04). The Examiner has failed to provide any such evidence or reasoning. Thus, the Examiner has improperly relied on an argument unsupported by the applied references, or extrinsic evidence. Accordingly, Applicants respectfully request that the rejections be withdrawn.

Furthermore, Applicants respectfully submit that one would not reasonably expect that a functioning EL device could be prepared as suggested by the Examiner, since the individual layers of the device are quite thin. See, for example, Epstein at col. 8, lines 4-14, which describes layer thicknesses ranging from 0.5-10,000 nm, preferably 20-200 nm. Such thin layers would reasonably be quite fragile, and would therefore be difficult if not impossible to separately prepare and recombine without damaging the layers. Thus, even if, *arguendo*, the layers were separately prepared, one would not reasonably expect that such a process would provide a functioning EL device. Accordingly, the Examiner’s proposed process fails to support a *prima facie* case of obviousness. Applicants therefore respectfully request that the rejections be withdrawn.

In addition, the combination of Epstein and Nomura fails to describe the claimed EL device having a “thin film inorganic light emitting layer”.

Epstein describes an EL device which consists of “an electroluminescent **organic** material sandwiched between a first electrically insulating material and a second insulating material” (col. 2, lines 55-57; emphasis added). Nomura describes a capacitor, not an EL device, and therefore also fails to describe an organic light emitting layer. Thus, the combination of Epstein and Nomura would not provide the claimed EL device. Moreover, Epstein teaches that organic EL devices have superior properties compared to inorganic EL devices (see the discussion at col. 1-2 or Epstein). Thus, the combination of Epstein and Nomura also fails to suggest the claimed EL device. Accordingly, Applicants respectfully request withdrawal of the rejection.

The Examiner has rejected Claim 6, directed to specific inorganic light emitting layer compositions, under 35 U.S.C. § 103(a) over the combination of Epstein, Nomura, and Chen. Applicants respectfully traverse the rejection. As discussed above, Epstein describes an EL device having an organic light emitting and insulating layers. Nomura describes a capacitor, not an EL device, having an inorganic dielectric layer. Although the device of Chen may include an inorganic light emitting material (i.e., those at column 3, lines 14-44), the device of Chen does not include an inorganic light emitting layer combined with an insulating layer, as in the claimed EL device. Thus, the combination of Epstein, Nomura, and Chen fails to describe the claimed EL device, having a combination of an inorganic thin film light emitting layer and an inorganic insulating layer. As discussed above, Epstein teaches that organic EL devices are superior to inorganic EL devices. However, Applicants have found that the claimed EL device, combining an inorganic light emitting layer and the claimed inorganic insulating layer provides improved properties compared to conventional EL devices. For example, the claimed EL device has a “low emission start voltage”, “ emission driving

voltage” and “stable light emission performance” (specification at page 4, first paragraph). Thus, the combination of Epstein, Nomura, and Chen also fails to suggest the claimed invention.

In order to provide the claimed EL device, the Examiner suggests that it would be obvious to replace the organic light emitting layer of Epstein with the inorganic light emitting material of Chen, and also replace the organic insulating layer of Epstein with the inorganic insulating material of Nomura. These substitutions would thereby convert the completely organic EL device of Epstein into a completely inorganic device. As discussed above, Epstein teaches that organic EL devices have superior properties compared to inorganic EL devices. However, the proposed combination of Epstein, Nomura, and Chen would effectively convert the device of Epstein into the very inorganic EL devices which Epstein teaches are unsuitable (see “Background” section of Epstein, cols. 1-2). In other words, the proposed combination of Epstein, Nomura, and Chen render the EL device of Epstein “unsatisfactory for its intended purpose” (M.P.E.P. § 2143.01), and therefore, as a matter of well established law, cannot provide a “suggestion or motivation to make the proposed modification.”

Furthermore, since Epstein teaches that organic and inorganic EL devices are quite different, the proposed combination of Epstein, Nomura, and Chen would change the basic principle of operation of the device of Epstein, and therefore the teachings of the references are not sufficient to render the claims *prima facie* obvious” (M.P.E.P. § 2143.01).

Accordingly, Applicants respectfully submit that the proposed combination of Epstein, Nomura, and Chen is improper, and request that the rejections be withdrawn.

The rejection of Claim 15 under 35 U.S.C. § 103(a) over the combination of Epstein, Nomura, and Arai is respectfully traversed. Arai describes an organic EL device, which lacks insulating layers. As discussed above, the combination of Epstein and Nomura fails to

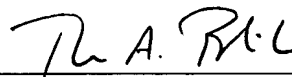
describe the claimed inorganic EL device, having a combination of an inorganic light emitting layer and an inorganic insulating layer. Arai fails to rectify this omission.

Accordingly, the combination of Epstein, Nomura, and Arai fails to anticipate or suggest the claimed invention.

Accordingly, and for the reasons stated above, Applicants respectfully submit that the claims are now allowable. Early notification thereof is earnestly solicited.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER, & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No.: 24,618

Thomas A. Blinka, PhD
Registration No. 44,541



22850

Tel.: (703) 413-3000
Fax: (703) 413-2220

I:\ATTY\TAB\200083US-AF.DOC